

## Checkpoint Generation and Usage in a Virtual Computer System

### ABSTRACT OF THE DISCLOSURE

To generate a checkpoint for a virtual machine (VM), first, while the VM is still  
5 running, a copy-on-write (COW) disk file is created pointing to a parent disk file that the  
VM is using. Next, the VM is stopped, the VM's memory is marked COW, the device  
state of the VM is saved to memory, the VM is switched to use the COW disk file, and  
the VM begins running again for substantially the remainder of the checkpoint  
generation. Next, the device state that was stored in memory and the unmodified VM  
10 memory pages are saved to a checkpoint file. Also, a copy may be made of the parent  
disk file for retention as part of the checkpoint, or the original parent disk file may be  
retained as part of the checkpoint. If a copy of the parent disk file was made, then the  
COW disk file may be committed to the original parent disk file.